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Almroth E. Wright, of London, whose work on the opsonic index has opened a new field of many possibilities, discusses the principles of vaccine therapy, especially under the guidance of the opsonic index; while Professor Müller, the eminent clinician of Munich, reviews the nervous affections of the heart, from the standpoint of one who is familiar with modern cardiac physiology and pathology. Professor Herter, of Columbia, discusses the common bacterial infections of the digestive tract and the intoxications arising from them—a subject which his researches have made largely his own. Professor Porter, of Harvard, discusses vasomotor relations in animals and men, partly with reference to the theory of vasomotor depression in shock, and presents many results of his own experiments. Professor Adami, of McGill, deals with the myelins and potential fluid crystalline bodies of the organism, showing their wide distribution and their physical and chemical relations. Dr. Meltzer, of the Rockefeller Institute, under the title "The factors of safety in animal structure and animal economy," raises the question whether in the structures and functions of the animal organism considerations of economy or of luxury, the latter involving the factor of safety, are paramount, and demonstrates the wide occurrence of safety mechanisms. Professor Benedict, the director of the Nutrition Laboratory of the Carnegie Institution, presents the results of a long series of observations on the metabolism of human beings during inanition, the work having been done with the aid of the large respiration calorimeter at Wesleyan University. Professor Wilson, of Columbia, summarizes the results of some recent studies of heredity, especially certain researches on the chromosomes, which may prove to furnish a physical explanation of the main facts of Mendelian heredity. Professor Huntington, of Columbia, presents the standpoint of the modern anatomist in an article, accompanied by many illustrations from his own preparations, on "The genetic interpretation and surgical significance of some variations of the genito-urinary tract." Professor Councilman, of Harvard, describes the changes in the

lymphoid tissue in certain of the infectious diseases, particularly in diphtheria, scarlet fever and small-pox.

Each lecture represents a valuable summary of present knowledge in its specific field. Furthermore, the lack and uncertainties of present knowledge are often indicated, and the possibilities of investigation along specific lines are emphasized. It is in the element of stimulating suggestiveness that the value and charm of the book largely lie. Each author writes as a master in his own subject, and the reader can not fail to feel this. The whole volume reflects the spirit of the modern scientific method, of which each author is an able exponent.

The Harvey Society has already received wide attention and approbation outside the immediate circle of its auditors. With its annual output from the leaders in the medical sciences it is doing a most important work in bridging the gap, which ought never to exist unbridged, between the laboratory investigator and the medical practitioner. Its annual volume of lectures can not fail to find a wide circle of readers.

FREDERIC S. LEE

COLUMBIA UNIVERSITY

Pollution of New York Harbor as a Menace to Health by the Dissemination of Intestinal Diseases through the Agency of the Common House Fly. A report by DANIEL D. JACKSON, S.B., to the Committee on Pollution of the Merchants' Association of New York. The Merchants' Association of New York, New York City, N. Y., July, 1908. 22 pp.; maps Nos. 1 and 2, 3 diagrams, 2 plates, 1 table.

This attractive little report of an investigation of the sanitary conditions of the waterfront of New York City made during the breeding season of 1907 deserves attention, especially from the sanitarian and the medical profession if not from the general biologist and the laity.

The investigation consisted of an inspection of the entire water-front of the city in order to show the presence of numerous sources of infection and breeding places for

flies, and secondly, of a study of the abundance of flies and their connection with the spread of intestinal diseases of man, and what proportion of these diseases were due to the agency of the common house fly.

The investigation was carried on primarily to obtain evidence for the Committee on Pollution of the Merchants' Association of New York, that unsanitary conditions existed and that these conditions were directly responsible for the prevalence of certain intestinal diseases of man; so that the said committee would have some basis for complaint to the proper authority against the open violation of the health laws by the citizens of the city. The inspection of the water-front (pp. 8-16) revealed large quantities of both human and horse excreta exposed to fly infestation on piers, along the beach, and so forth, as well as sewage and refuse matter of all kinds; in a word an abundance of decomposed matter and filth suitable for the breeding place of flies, and swarming with the latter and their young.

Having obtained evidence by means of inspection that the forementioned unsanitary conditions existed, and that flies were breeding in and frequenting the fecal matter exposed to them, an investigation was also conducted by means of fly traps placed in various parts of the city, to determine what bearing the products (flies) of these conditions had upon the actual transmission of intestinal diseases within the city.

The traps near unsanitary points caught the largest number of flies, showing that these conditions attracted them; those in cleaner portions of the city caught but very few. The flies caught in the traps were counted each day and tabulated by weeks. The weekly totals are then compared by means of a table (p. 17) with the weekly totals of deaths in the city from diarrhoeal diseases, showing parallelism; this is further brought out by means of two diagrams (facing p. 14) showing the coincidence of the maximum abundance of flies and of that of the intestinal diseases of man. Still another diagram (facing p. 12) gives the curves of temperatures,

representing fly activity, and of typhoid fever and other intestinal diseases, for a period of the five preceding years, again showing almost exact parallelism. Two maps (maps Nos. 1 and 2) are also introduced as further evidence, showing the location of the individual cases of typhoid fever in the Borough of Manhattan (map number 1) for 1904, and the location of deaths from intestinal diseases for the same area during 1906 (map number 2), and they emphasize the fact that the great majority of the cases of sickness and of death were located at those points found to be most unsanitary in 1907; that is to say, were distributed over the fly-breeding area. A few other minor corroborative facts are recorded, such as the finding of numerous pathogenic bacteria on the appendages of flies during the breeding season, and but little or none at all on them just following hibernation. The conclusion indicated is obvious, but I quote the author's concluding paragraph (p. 19):

It is to be hoped that the gross defects which we have pointed out in general sanitation as well as in sewage disposal will be remedied before the summer of 1908. We have estimated that proper sanitation along the lines pointed out will reduce the typhoid deaths in New York from 650 to 360 a year and the diarrhoeal deaths from 7,000 to 2,000 a year. This latter figure provides that germ-infected flies are not permitted to contaminate the milk supply before it reaches the city or after. This saving of over 5,000 lives a year will also be accompanied by the additional saving of some 50,000 cases of sickness.

While the report establishes no new facts in regard to the transmission of diseases by flies (*Musca domestica* Linnæus), it is an important *exposé* of actual conditions existing in our most crowded city, and is corroborative of previous investigations; besides, it brings out the possibilities of lessening deaths and sickness due to the agency of house flies by proper sanitary measures.

As a contribution to science, the report is very poorly presented; it suffers especially from lack of arrangement and will give trouble to the bibliographer. No new biological facts are recorded about the common house fly, and the author apparently does not

distinguish between this species (*Musca domestica* Linnæus) and others, which under certain conditions may have appeared in the traps in considerable numbers, and while having no relevancy, materially affect the results. Such biological facts as are given are compiled without reference to sources, and some of the statements are obviously wrong. For instance, this—"The number of eggs laid by each female fly during the season is about 1,000" (p. 17). Presenting compiled matter in this manner can not be too strongly discouraged, as it forms a stumbling block to future investigators; for appearing to have originated with the author giving them and based on sufficient data, in reality they are statements made by others and should not be accepted unless the sources are given. Otherwise, science would be credulous.

A. ARSÈNE GIRAULT

URBANA, ILL.,

September 23, 1908

SCIENTIFIC JOURNALS AND ARTICLES

The American Naturalist for September begins with an article by T. D. A. Cockerell on "Some Results of the Florissant Expedition of 1908." It notes that the best exhibit of Florissant fossils is now at the University of Colorado and incidentally describes two new species of fossil plants. Leroy D. Swingle describes the "Embryology of *Myosurus Minimus*" and this arouses the query should a specific name be capitalized even in the title of an article? J. A. Allen presents "Another Aspect of the Species Question" showing that the problems of nomenclature are somewhat different in zoology from what they are in botany and that botanists do not always describe their species so that they may be recognized from the descriptions alone. G. H. Parker considers "The Origin of Vertebrate Eyes" casting the weight of his opinion with those who consider that they arose from the internal central nervous system and not on the exterior.

Bird-Lore for September-October contains the following articles, mostly illustrated: "A Raven's Nest," by Francis H. Allen, "Hum-

mingbird Eccentricities," by Mary P. Allen; "A Mockingbird's June," by Albert V. Goodpasture; "The Growth of Young Black-billed Cuckoos," by A. A. Saunders; "Chestnut-sided Warbler," by Mary A. Dickerson, and the sixth paper on "The Migration of Flycatchers," by W. W. Cooke. The "Educational Leaflet," by Mabel Osgood Wright, is devoted to the kinglets. The report of the Audubon Societies notes the establishment of three new Bird Reservations, near Kew West, Fla., Klamath Lake, Oregon, and Lake Malheur, Oregon.

The Museums Journal, of Great Britain, for August contains a brief summary of the proceedings at the Ipswich conference, the program followed and lists of officers and members. The papers presented will appear in subsequent numbers. A brief article is devoted to "The British Museum (Natural History)," dealing with the question of the appointment of a keeper of zoology and a director, positions which have been vacant since the retirement of Sir E. Ray Lankester at the end of 1907.

The American Museum Journal for October under the caption "To the Bahamas for Coral" notices the successful expedition made for this purpose and gives some fine pictures of living corals. Additions are noted to the exhibition series of fossil horses and dinosaurs, to the collection of whales, series of heads of game animals, and the exhibit illustrating the motions of the planets.

The Museum News of the Brooklyn Institute notes important changes in the arrangement of the collections and numerous additions to the exhibition series. A novelty is the installation of a large group showing the home of the guacharo bird, so arranged that the visitor can illuminate the cave by pressing a button. Another important group is that of Steller's Sea Lion. An article on the botanical collections calls attention to some important material in the herbarium. The part devoted to the Children's Museum contains a list of material that may be loaned to schools.